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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,454	10/08/2003	Xiaoling Wang		9351

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EXAMINER

NGUYEN, KIET TUAN

ART UNIT PAPER NUMBER

2881

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/681,454	<b>Applicant(s)</b> WANG, XIAOLING	
	<b>Examiner</b> Kiet T. Nguyen	<b>Art Unit</b> 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Objected Informalities***

The disclosure is objected to because of the following informalities:

**In The Claims**

Claim 1, line 6, "while it is" should be deleted.

Claim 28, line 2, "and" should be deleted.

Claim 28, line 3, "and" should be deleted.

Claim 29, line 2, "is" should be deleted.

Claim 30, line 2, "are" should be -- is --.

Appropriate correction is required.

***Objected Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the multiple turns as recited in claims 25 and 36; the spiral shape with multiple turns as recited in claims 26 and 37; and the pipe device including a first pipe having a first shape and a second pipe having a second shape differing from the first shape as recited in claim 38 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Rejection Under 35 U.S.C. 112, Second Paragraph***

Claims 28-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 28 is indefinite for reciting the limitation "the flow inside the pipe device" in lines 10-11. What is a substance that flows through the inside of the pipe device?

***Rejection Under 35 U.S.C. 102(b)***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-6, 9-10, 12-16, 21-23 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Mullen (5,320,749).

Mullen (5,320,749) discloses, in figs. 1-8, an ultraviolet irradiation apparatus for treatment of fluid such as water. The apparatus includes a plurality of pipes 16 containing the flowing water; a plurality of connecting covers 40, 52, 80, 82 or 86 for connecting the plurality of pipes 16 to make a U-shape; a plurality of ultraviolet lamps 14; and an enclosure 11 having a fluid inlet 22 and a fluid outlet 24, a square or rectangular cross section (see figs. 1-3 and 6) and an inside reflecting surface (see col. 4, lines 48-49).

***Rejection Under 35 U.S.C. 103(a)***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 7-8, 11, 17-20 and 24-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mullen (5,320,749).

Mullen (5,320,749) discloses all the features as discussed above except the substance being air as recited in claim 2; the enclosure having a circular cross section as recited in claim 7; the enclosure having an elliptical cross section as recited in claim 8; the enclosure having a polygonal cross section as recited in claim 11; the pipe having an elliptical cross section as recited in claim 17; the pipe having a square cross section as recited in claim 18; the pipe having a rectangular cross section as recited in claim 19; the pipe having a polygonal cross section as recited in claim 20; a W-shaped pipe as recited in claims 24 and 35; the pipe containing multiple turns as recited in claims 25

and 36; a long and bended pipe in a spiral shape with multiple turns as recited in claims 26 and 37; each of the plurality pipes having a different shape as recited in claims 27 and 38; and a plurality of inflow openings and a plurality of outflow openings as recited in claim 28.

Irradiating the air with the ultraviolet is considered to be obvious variation in design, since it well known in the art to irradiate the air with the ultraviolet as disclosed in col. 3, lines 1-20 and fig. 3 of Izumiya (4,992,169), thus would have been obvious to one skilled in the art use the ultraviolet to irradiate the air in the Mullen (5,320,749) ultraviolet irradiation apparatus for treatment of the air as well as the water.

Using the enclosure having a circular cross section, an elliptical cross section or a polygonal cross section; or using the pipe having an elliptical cross section, a square cross section, a rectangular cross section, a polygonal cross section, a W-shaped pipe, multiple turns, a long and bended pipe in a spiral shape with multiple turns or each of the plurality pipes having a different shape is considered to be obvious variation in design, since the size and shape of an element is consisting of sizing and shaping means for use as JP-402052086A discloses pipes connected to forming multiple turns (see fig. 3), Tucker (4,798,702) discloses a long and bended pipe in a spiral shape with multiple turns (see figs. 1-11) or Phillips et al. disclose a rectangular pipe (see figs 1-6), thus would have been obvious to one skilled in the art use the enclosure having a circular cross section, an elliptical cross section or a polygonal cross section; or the pipe having an elliptical cross section, a square cross section, a rectangular cross section, a polygonal cross section, a W-shaped pipe, multiple turns, a long and bended pipe in a

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spiral shape with multiple turns or each of the plurality pipes having a different shape in the Mullen (5,320,749) ultraviolet irradiation apparatus for treatment of the water.

Using the plurality of inflow openings and the plurality of outflow openings is also considered to be obvious variation in design, since they are duplicating of apart for performing multiple functions, thus would have been obvious to one skilled in the art use the plurality of inflow openings and the plurality of outflow openings in the Mullen (5,320,749) ultraviolet irradiation apparatus for treatment of the water.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1) JP-402052086A discloses an uv apparatus for treating the water in a pipe;

2) Tucker (4,798,702) discloses an uv apparatus for treating the water in a long and bended pipe in a spiral shape with multiple turns;

3) Izumiya (4,992,169) discloses an uv apparatus for treating the air in a pipe;  
and

4) Phillips et al. (6,280,615) discloses an uv apparatus for treating the water in a rectangular pipe.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiet T. Nguyen whose telephone number is 571-272-2479. The examiner can normally be reached on Monday-Friday 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R Lee can be reached on 571-272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KN

  
KIET T. NGUYEN  
PRIMARY EXAMINER